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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,782	12/03/2001	Fred J. Reuter	TI-19560	7094
23494	7590	11/19/2004	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			CHACE, CHRISTIAN	
			ART UNIT	PAPER NUMBER
			2187	

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/998,782

**Applicant(s)**

REUTER, FRED J.

**Examiner**

Christian P. Chace

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 29 October 2004 has been entered.

### ***Response to Amendment***

Amendment submitted 29 October 2004 has now been entered upon filing of RCE. Applicant's arguments have been carefully and respectfully considered, and, in light of the instant amendment, the objections to the disclosure have been removed, as applicant's arguments with respect to same are persuasive in light of the instant amendment. However, applicant's arguments with respect to the 35 USC 102 and 103 rejections of the instant claims, even as amended, were not persuasive. Accordingly, this action has been made FINAL.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 4-6, 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Chowdhuri et al (US Patent #6,674,443).

With respect to claims 1 and 5, Chowdhuri et al disclose an image data processing method and system, the system including a memory (120A in Figure 4) storing image data having data words of a predetermined data width, each data word including a plurality of image pixels adjacently disposed on a single scan line [a "row" in Chowdhuri et al may be defined as being equal to a "word" within the scan lines which comprise a "tile." Note column 4, lines 31-44; column 4, line 48 to column 5, line 19; and column 6, lines 8-53, e.g., and also note that the size and configuration of a tile may be dynamically changed (see column 6, lines 39-43 and column 7, lines 37-52, e.g.)].

A set of a predetermined number of consecutive data scan lines corresponds to a two dimensional tile of the image, whereby adjacent data words store image pixels of adjacent scan lines. Here, Chowdhuri et al disclose dividing an image into a plurality of two dimensional tiles, each tile comprised of or having a first predetermined number of image pixels adjacently disposed in a single scan line or row, with each tile having a

second predetermined number of adjacent scan lines or rows (Chowdhuri et al teach that each of the tiles may be comprised of a plurality of adjacently disposed rows or scan lines (see Figure 3 and column 6, lines 51-56, e.g.)).

Chowdhuri et al also disclose that the image data processing system further includes a tile cache memory (see cache 410A in Figure 4) capable of storing a tile of image data from the memory, with the data processing system including a data processing "apparatus" connected to the memory and tile cache memory which is programmed to transfer a "tile" of image data from the memory into the tile cache memory, perform an image operation on the tile of image data stored in the tile cache memory, and transfer the tile of image data from the tile cache to the memory so as to reduce overall processing time, such as for graphics or display data (see column 4, line 60 to column 5, line 19 and column 5, lines 42-66, e.g.).

With respect to claims 2 and 6, the steps of transferring a tile of image data from the memory into the cache and performing image operations of tile data stored in the cache being sequentially repeated for each component or tile of the image data is inherent, otherwise only one tile would be processed. (Note the plurality of tiles in Figure 3, as well as Figure 8, e.g.).

With respect to claim 4, the image processing includes reading data from the image memory, modifying the data and writing individual pixels within a data word (see column 5, line 20 to column 6, line 19, e.g.).

With respect to claims 8 and 9, Chowdhuri et al also disclose that transferring the tiles of image data between the memory and the cache includes making a

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predetermined number of dynamic random access memory (DRAM) page mode accesses (see column 6, lines 49-53, e.g.), wherein if a "row" or "page" is stored in a single scan line and each tile has the second predetermined number of scan lines, then the (second) predetermined number of page mode accesses may be made to access the scan lines in a tile.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chowdhuri et al (cited supra) in view of Mita et al (US Patent #5,293,481).

Chowdhuri et al disclose an image data processing method and system including a memory storing image data and a tile cache memory as in the claimed invention (see supra). Chowdhuri et al also discuss accessing data in a plurality of tiles (see column 8, lines 1-3, e.g.), but does not teach providing multiple processors to operate upon different tiles or components of the image data simultaneously.

Mita et al similarly disclose an image data processing apparatus and teach providing a plurality of processors or processing elements for simultaneously processing or operating upon differing components of the image data so as to increase processing speed (see column 33, line 51 to column 34, line 60 and Figures 57-59, e.g.). See also figure 67, which is further discussed in column 38, lines 37-53.

Accordingly, it would have been readily obvious to one of ordinary skill in the art at the time the claimed invention was made to utilize multiple processors to simultaneously operate upon differing tiles or components of image data, as taught by Mita et al, in the image processing system of Chowdhuri et al, in order to process the image data at high speed, high speed processing being a highly desirable feature in image data processing due to the amount of data included in an image, as made hackneyed by the state of the art.

### ***Response to Arguments***

With respect to applicant's argument that claims 1 and 5 recite subject matter not anticipated by Chowdhuri et al, examiner respectfully disagrees. Specifically, applicant argues that the claim language, "requires the data to be stored in the memory in tiles." Examiner respectfully disagrees. The claim language in claims 1 and 5 recites, "corresponding to a [two dimensional] tile," not actually stored as a tile. Accordingly, applicant's argument is not commensurate with the instant claim language.

With respect to applicant's argument that claims 1 and 5 recite further subject matter that is not anticipated by Chowdhuri et al, examiner again, respectfully disagrees. Specifically, applicant argues that the claims require, "a single data word of the memory to store plural pixels." This assertion is not commensurate with the claim language. For example, the predetermined number of pixels could be zero or one.

Also, applicant argues that Chowdhuri et al includes no teaching regarding the relative length of a data word as a pixel. As the instant claim language does not recite

such a feature, examiner must respectfully note that this argument is also not commensurate with the instant claim language.

With respect to applicant's argument that the examiner's suggestion that the row disclosed in Chowdhuri et al corresponds to the recited data word finds no basis within the reference, examiner respectfully disagrees. Rows of memory inherently contain data words.

With respect to applicant's argument that claims 3 and 7 recite subject matter that is not made obvious by the combination of Chowdhuri et al and Mita et al, examiner respectfully disagrees. Specifically, applicant argues that Mita et al fails to teach the use of plural processors to each process tiles as recited in claims 3 and 7. Examiner respectfully disagrees, and, even assuming, *arguendo*, that the previous citation in Mita et al, which was offered as an example, and not limiting, is not anticipatory of the claim language, certainly applicant may more explicitly see the anticipation of the limitations at issue in figure 67, which is further discussed in column 38, lines 37-53.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian P. Chace whose telephone number is 571.272.4190. The examiner can normally be reached on MAXI FLEX.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on 571.272.4201. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Ch P. Chace', with a long horizontal flourish extending to the right.

Christian P. Chace  
Examiner  
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